

In the Claims:

The following is a complete listing of the claims pending in the present application:

1. (Currently Amended) A short-circuiting member comprising:
 - a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:
 - a plurality of outer circumference terminals arranged along the outer circumference;
 - a plurality of inner circumference terminals arranged along the inner circumference; and
 - a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction, wherein:
 - the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;
 - the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and
 - the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the surfaces of the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other.
2. (Currently Amended) ~~The short-circuiting member according to claim 1~~ A short-circuiting member comprising:
 - a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:
 - a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction, wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other,
wherein:

the adjacent connection portions are bent or curved in the lamination direction so as to be spaced from each other.

3. (Currently Amended) ~~The short-circuiting member according to claim 1~~ A short-circuiting member comprising:

a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:

a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference

terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction, wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other,

wherein:

each of the plurality of connection portions is thinner than the outer circumference terminals and the inner circumference terminals in the lamination direction, ~~the short-circuiting member further including:~~

~~an insulator arranged between the adjacent connection portions.~~

4. (Original) The short-circuiting member according to claim 3, further comprising: an interval maintaining member for maintaining an interval between the adjacent connection portions.

5. (Currently Amended) The short-circuiting member according to claim 4, wherein: the short-circuiting member further including an insulator arranged between the adjacent connection portions; and

the insulator includes a positioning portion for positioning the plurality of components in the circumferential direction.

6. (Original) The short-circuiting member according to claim 1, wherein: each of the plurality of connection portions is formed along an involute curve.

7. (Currently Amended) ~~The short-circuiting member according to claim 1~~ A short-circuiting member comprising:

a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:

a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction, wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other,
wherein:

at least either one of the plurality of outer circumference terminals and the plurality of inner circumference terminals include fitting recesses and fitting projections that are formed alternately in the circumferential direction.

8. (Original) The short-circuiting member according to claim 7, wherein:

the fitting recesses and the fitting projections are formed in a substantially middle part of the plurality of outer circumference terminals or the plurality of inner circumference terminals.

9. (Original) A commutator comprising:
the short-circuiting member according to claim 1; and
a plurality of segments connected to the plurality of outer circumference terminals
or the plurality of inner circumference terminals.

10-16. (Cancelled)

17. (Currently Amended) ~~The commutator according to claim 12,~~ A commutator comprising:

a short-circuiting member comprising:

a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:

a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction,

wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the

lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other; and

a plurality of segments connected to the plurality of outer circumference terminals or the plurality of inner circumference terminals,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member, and

wherein:

the plurality of segments each have a recess formed in an end of the segment;

the plurality of outer circumference terminals each have a projection insertable in the corresponding recess; and

the short-circuiting member is arranged at an end of the commutator main body in a state in which the projections of the outer circumference terminals are inserted in the recesses of the segments.

18. (Currently Amended) ~~The commutator according to claim 12,~~ A commutator comprising:

a short-circuiting member comprising:

a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:

a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference

terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction,

wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other; and

a plurality of segments connected to the plurality of outer circumference terminals or the plurality of inner circumference terminals,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member, and

wherein:

the plurality of segments each have a recess formed in an end of the segment and include a pair of arms;

the plurality of outer circumference terminals includes a hooking portion, projecting through the corresponding recess, for hooking a winding wire; and

each hooking portion is fixed by bending together the pair of arms of the corresponding recess.

19. (Currently Amended) ~~The commutator according to claim 12,~~ A commutator comprising:

a short-circuiting member comprising:

a plurality of components, each having an outer circumference and an inner circumference, and each of the plurality of components including:

a plurality of outer circumference terminals arranged along the outer circumference;

a plurality of inner circumference terminals arranged along the inner circumference; and

a plurality of connection portions, each connecting a corresponding one of the outer circumference terminals and a corresponding one of the inner circumference terminals with the connection portions separated from each other by a predetermined angle in a circumferential direction,

wherein:

the plurality of outer circumference terminals, the plurality of inner circumference terminals, and the plurality of connection portions are substantially formed along the same plane;

the plurality of components are laminated in a state in which the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

the outer circumference terminals that are adjacent in a lamination direction are in contact with each other, the inner circumference terminals that are adjacent in the lamination direction are in contact with each other, and the connection portions that are adjacent in the lamination direction are not in contact with each other; and

a plurality of segments connected to the plurality of outer circumference terminals or the plurality of inner circumference terminals,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member,

wherein:

the plurality of segments form a substantially cylindrical shape, and the commutator main body is formed at an inner side of the plurality of segments and has an accommodation portion for accommodating the short-circuiting member, and
wherein:

the plurality of outer circumference terminals each come in contact with an inner circumference of the corresponding segment.

20. (Withdrawn) A method for manufacturing a short-circuiting member formed of a plurality of components each having outer and inner circumferences, with outer and inner circumference terminals arranged respectively along the inner and outer circumferences, the method comprising the steps of:

performing a punching process on a plurality of conductive plate members to form a plurality of connection portions spaced from one another in a circumferential direction and shaping-stage connection portions for connecting either one of the plurality of outer circumference terminals and the inner circumference terminals;

laminating the plurality of conductive plate members after the step of performing a punching process so that the connection portions of one of the plurality of components are reversed to the connection portions of another one of the plurality of components; and

removing the shaping-stage connection portions from the plurality of laminated conductive plate members.

21. (Withdrawn) The manufacturing method according to claim 20, further comprising the step of:

filling and curing an insulator for maintaining an interval between the connection portions between the step of laminating and the step of removing.

22. (Withdrawn) The manufacturing method according to claim 21, wherein:

the the step of filling and curing an insulator includes arranging in a mold an interval maintaining member for maintaining the interval between the connection portions that are adjacent in a lamination direction.

23. (Withdrawn) The manufacturing method according to claim 20, wherein the step of performing a punching process includes:

forming a plurality of connection portions that are oriented in a first direction by performing the punching process on a first conductive plate member; and

forming a plurality of connection portions that are oriented in a second direction that is reverse to the first direction by performing the punching process on a second conductive plate member.